doubt is strengthened almost to a certainty by recollection of the fact that the king vulture, which is well known in that region, is of about the same size and general habits as the turkey buzzard, and in plumage almost wholly white or whitish; as Dampier expresses it, "their Feathers looked as if they were sullied." Furthermore, he states that the inhabitants of Campeche called them "King-Carrion Crows." It is evident, therfore, that we must identify Dampier's white "Carrion Crows" as king vultures (*Gypagus papa*).

It might be well, moreover, in this connection, to mention that albinos of the turkey buzzard, or, as it is more properly called, the turkey vulture (*Cathartes aura*), are by no means extraordinary, though of course not common. The present writer has, during the course of several years, examined a number of specimens; and among recorded instances we might mention that of Nauman in Florida[2] and Gundlach in Cuba.[3]

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SCIENTIFIC BOOKS

The Early Mesozoic Floras of New Zealand: By E. A. ARBER. New Zealand Geological Survey, Paleontological Bulletin No. 6. 1917.

Fossil plants have been known from New Zealand for over half a century, but there has never been a comprehensive account of them published, and the wide variations in the opinions of the local geologists and paleontologists regarding the ages of the important stratigraphic units has made it impossible for students elsewhere to reach any intelligent understanding of the situation. Such an understanding is especially important in the case of so interesting and strategic a region, and its former relations to Gondwana Land, Antarctica and Australia have long been controverted questions.

The present comprehensive account of the older Mesozoic floras is therefore of great value to paleogeographers and to students of geographical distribution. The more important localities from which the fossil plants are described are the Rhætic of Mount Potts and Clent Hills in Canterbury and the Hokonui Hills in Southland; Owaka Creek in Otago is doubtfully referred to the Rhætic; Mokoia and Metaura Falls in Southland are referred to the lower Jurassic; Malvern Hills in Canterbury is doubtfully referred to the lower Jurassic; Waikawa in Southland to the middle Jurassic; and Waikato Heads in Auckland to the Neocomian.

The disputed question of the occurrence of *Glossopteris* is definitely answered in the negative and it is shown that there was considerable specific variation between the Rhætic flora of New Zealand and that of Australia, India and South Africa. The Jurassic floras appear to show less specific differences when compared with other areas. The author concludes that New Zealand was surely united with Australia during Rhætic and Jurassic times, but he objects strongly to using the term Gondwana Land for anything post-Paleozoic, although it is obvious that the existence of Gondwana Land as a geographical region did not cease with the close of the Paleozoic. Many geologists have also reached the conclusion that the evidence for the lower Permian age of the glacial period is sufficiently good to warrant the dropping of the term Permo-Carboniferous for it, although doubtless this practise will survive indefinitely in more conservative countries like Great Britain.

It would seem to the reviewer that it would have been preferable to use Mesozoic instead of Mesophytic for the floras discussed, since the latter term has a well-understood ecological significance. The perpetuation of the use of *Sphenopteris* for post-Paleozoic fern fragments is also to be deprecated, and it is questionable if clearness of understanding is facilitated by substituting *Tæniopteris* for *Oleandra* and *Macrotæniopteris*. Of great interest is the discovery of two forms of dicotyledonous leaves in beds referred to the Neocomian. These are described by Professor

[2] *American Naturalist*, IV., August, 1876, p. 376.
[3] *Auk*, VIII., April, 1891, p. 190.

Laurent, of Marseilles, who refers one to Unger's genus *Artocarpidium* and does not venture beyond *Phyllites* in the identification of the other.

While not absolutely unique, even if the age is as great as is assigned to them, since some of the leaves described by Fontaine from the Neocomian of Virginia may be dicotyledonous, the New Zealand examples are less ambiguous. It may be pointed out however that Lower Cretaceous and Neocomian are not synonymous terms, as one might infer the author to believe, and no evidence is presented which would indicate that these New Zealand deposits could not be Barremian, Aptian or even Albian in age, and in the last stage dicotyledons are fairly common in both America and Europe.

A table giving the distribution of the New Zealand species in other regions would have added much to the usefulness of the report.

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SPECIAL ARTICLES

THE FACTORS INFLUENCING THE ATTITUDE OF THE HEAD IN ANIMALS WITH INJURY TO ONE OTIC LABYRINTH

MAGENDIE, more than a century ago, recognized that the central nervous system participated in the maintenance of the attitudes of the body as well as in its movements. Recently Sherrington has called attention to this function under the head of the postural activity of muscle nerve. The attitude of the head is one of the characteristics of experimental removal of one otic labyrinth in animals, and the analysis of the factors involved becomes of importance from the point of view of the relation of the attitude of the head to the maintenance of the position of the body in space and hence, to the problem of the maintenance of equilibrium, as well as from its own intrinsic interest. This analysis was begun by Dr. A. L. Prince, of Yale,[1] in this laboratory more than two years ago, but his service in a base hospital of the American Forces in France led to an interruption of the experiments. We desire to add a brief statement of new experiments at this time. We hope later to publish the data in full with Dr. Prince as the senior author.

The torsion of the head, always seen after removal of one otic labyrinth, with the occiput turned toward the injured side, largely disappears after removal of the homolateral cerebral motor cortex in dogs. The torsion reappears if the heterolateral cerebral motor area is removed some weeks or months after the ablation of the homolateral area.

The torsion of the head is greatly increased, and the rolling movement toward the side of the injured labyrinth, together with the ocular movements (ocular nystagmus) reappear, if the heterolateral cerebral motor cortex is removed some weeks after the time of the labyrinthine operation. Rolling movements of the animal to the side of the remaining cerebral motor area reappear, but no nystagmus, if one cerebral motor area is removed some weeks after bilateral labyrinthine operation.[2]

Our experiments have given a new interest to Magendie's statement that the division of the central nervous system into segments, *e. g.*, medulla oblongata, cerebellum and cerebrum, is an artificial division from the point of view of the physiologist, and that all parts must be considered together in arriving at an estimate of its functions.

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A SLOW-SPEED KYMOGRAPH

PHYSIOLOGISTS and others using the "medium-spring" kymographs of the Harvard Apparatus Company, which are not provided with a slow-speed mechanism, may be interested in a simple device I have used for materially reducing the speed of the drum. It is shown in the appended figure. A small hole is drilled in the upper corner of the largest fan, and into it is tied a strong but flexible

[1] *Proceedings of the Society for Experimental Biology and Medicine*, 1916, XIII., p. 156.

[2] Unpublished experiments by Drs. Strauss and Friesner.